

individuals, and never shift the responsibility of medical supervision. A properly equipped department of physical therapy, under medical supervision, in a hospital should render the best service to the patient, afford physicians the opportunity of obtaining a better practical knowledge of physical therapy, give the medical student a working conception of this branch of medical treatment and train technicians to administer efficient treatment under the direction of a regular licensed physician.

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Dermatology and Syphilology

Calcium Therapy—Progress in therapeutics may follow one of two courses: discovery of new remedies or the more intelligent use of the old ones. New therapeutic agents, like new toys, are always more interesting than the old ones, yet the possibilities of many of the old remedies have by no means been exhausted.

This is exceptionally illustrated in the case of calcium in a recent paper by Roe and Kahn,¹ who show that food inhibits the absorption of calcium from the gastrointestinal tract. The value of calcium in the treatment of certain cutaneous disorders has been a matter of dispute for many years. C. J. White,² while admitting frequent failures, has been thoroughly convinced of its beneficial effects in chronic cases of urticaria, erythema multiforme, and several other conditions. A number of clinicians testify to its value in eczema.

The mode of action of calcium in those conditions which it is supposed to benefit has also been the subject of much debate. Earlier investigators were of the opinion that there was an actual deficit of blood calcium, with diminished coagulability of the blood. More recent studies, however, throw considerable doubt on both ideas. Schwartz and Levin³ examined the blood calcium in a number of skin disorders, including urticaria, eczema, psoriasis, acne and furunculosis, and found the calcium to be within normal limits in all but a very small percentage of cases. In three cases of actinic dermatitis, however, the blood calcium was distinctly low.

Pottenger⁴ has emphasized some new ideas concerning the rôle of calcium in disease. He points out that certain pathologic conditions such as asthma, hay fever, urticaria, and eczema are accompanied by parasympathetic or vagus hyperactivity which occurs in the presence of a relative excess of potassium ions over calcium ions, and that the administration of an excess of calcium stimulates the sympathetic system with relief of clinical symptoms. This might answer the objection that the blood calcium is *quantitatively* normal in eczema and urticaria, since it might at the same time be *relatively*

low as compared with potassium. This mechanism could also account for various exudative phenomena through action on the walls of the blood vessels or changes in the colloidal chemistry of blood or tissues. The subject is complicated, and our feeble knowledge of biochemistry and cell physics does not justify dogmatic assertions at the present time.

The importance of the observations of Roe and Kahn lies in the demonstration of the fact that optimum results from calcium therapy may be expected only when calcium is administered on an empty stomach. Conclusions based on small doses of calcium given either immediately before or immediately after meals are practically worthless. They show, for instance, that the administration by mouth of one single dose of 5 gm. of calcium lactate dissolved in water resulted in an increase of blood calcium from 9.8 mg. to 18.6 mg. in five hours, while in the same individual on another day, 55 gm. of calcium lactate given in 5 gm. doses in 250 cc. of milk for eleven consecutive hours resulted in a maximum rise of 12.5 mg. at the end of the eighth hour. In other words, 5 gms. of calcium lactate in water on an empty stomach caused a 91 per cent elevation of blood calcium in five hours, whereas eleven times as much calcium lactate given in milk produced only a 28 per cent elevation of blood calcium in eight hours. Their explanation of delayed absorption of calcium when given with food is that the food stimulates an outpouring of alkaline digestive juices in the duodenum which precipitates the calcium, thus making absorption of most of it impossible. Their observations include numerous determinations involving the administration of calcium lactate with foods of various kinds, all of which have an inhibitory action. They believe that 5 mg. of calcium lactate in water one-half hour before breakfast and three hours after the evening meal results in a prolonged elevation of the blood calcium fully as satisfactory as can be obtained by the intravenous administration and without any of the dangers.

With these three new ideas regarding calcium, (1) that a relative deficiency may exist in spite of a normal quantitative finding, (2) that the relative deficiency may exert a profound influence on the involutionary nervous system and possibly the colloidal structures of the tissues, and (3) that it is possible to effect a pronounced and prolonged increase of the blood calcium by oral administration of calcium lactate on an empty stomach—with these new ideas, an entirely new set of clinical observations should be compiled. In the light of these new findings it is to be hoped that many of the conflicting opinions of the past will give place to clean-cut certainties.

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3. Schwartz, H. J., and Levin, O. L.: The Calcium Content of the Blood in Various Diseases of the Skin, *Arch. Derm. and Syph.*, 10:544, November, 1924.

4. Pottenger, F. M.: *Am. J. Med. Sc.*, 167:203, February, 1924.

Since its inception the Jackson Clinic has removed more than seventeen hundred foreign bodies from the air and food passages of sufferers brought to Philadelphia from every part of this country and more distant lands. Eighty per cent of these patients have been children, many of them at death's door.—*American Magazine*.